



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/832,637 | 04/11/2001 | Alfons Gail | 10537/96 | 1822 |

26646 7590 11/23/2007
KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER

REESE, DAVID C

ART UNIT PAPER NUMBER

3677

MAIL DATE DELIVERY MODE

11/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 09/832,637 | Applicant(s) GAIL ET AL. | |
| | Examiner David C. Reese | Art Unit 3677 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-5, 8, 9, 12-14 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 8-9, 12-14, and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/10/2007 has been entered. Consequently, the following is the current listing of claims in the instant application:

Status of Claims

- Claims 2, 6-7, 10-11, and 15-16 are canceled.
- Claim 17 was added.
- Claims 1, 8-9, and 12 were amended.
- Claims 1, 3-5, 8-9, 12-14, and 17 are pending.

Claim Objections

[1] Claim 1 is objected to because of the following informalities: "recess" should be "a recess".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

[2] The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[3] Claims 1, 3-5, and 8-9 are rejected under 35 U.S.C. 102(b) as anticipated by Werner (WO98/53229), because the invention was patented or described in a printed publication in this or a foreign country, or in public use or on sale in this country more than one (1) year prior to the application for patent in the United States.

The shape and appearance of Werner is identical in all material respects to that of the claimed design, *Hupp v. Siroflex of America Inc.*, 122 F.3d 1456, 43 USPQ2d 1887 (Fed. Cir. 1997).

As for Claim 1, Werner discloses a brush seal (see figure below) for sealing a rotor (1) with respect to a stator (2), comprising:

bristles (3) including free ends oriented toward a first one of the rotor (1) and the stator; a bristle housing (4,5), the bristles (3) fastened in the bristle housing (4,5), the bristle housing (4,5) press fit in an axial space between a fastening element (6) and a second one of the rotor and the stator (2), the bristle housing (4,5) press-fit on the second one of the rotor and the

stator (2) against movement in a radial direction relative to the second one of the rotor (1) and the stator (2), the bristle housing (4,5) including

a cover plate (5) having an outer side surface (7) arranged on a first axial side (8) of the bristles (3) and an axial section (10) that extends axially from the outer side surface (7) in an axial direction away (10 can be considered as away from 3) from the bristles (3) to a free end (11),

a supporting plate (4) having an inner side surface (12) arranged on a second axial side (9) of the bristles (3) opposite the first axial side (8), and a circumferential section (13) that extends from the inner side surface (12) in the axial direction from the second axial side (9) of the bristles (3) to the first axial side (8) of the bristles (3) and axially beyond the free end (11) of the cover plate (5) to a flanged section (14), the flanged section (14) projecting radially inwardly beyond the free end (11) of the cover plate (5) [so as to form an undercut between the flanged section (14), the free end (11), and the outer side surface (7)] (the undercut as claimed above does not truly delineate the structural limitations of such a structure-consider adding limitations properly denoting the actual structure of said undercut instead of just describing its location), the bristles (3) being fastened in the bristle housing (4,5) between the inner side surface (12) and the outer side surface (7);

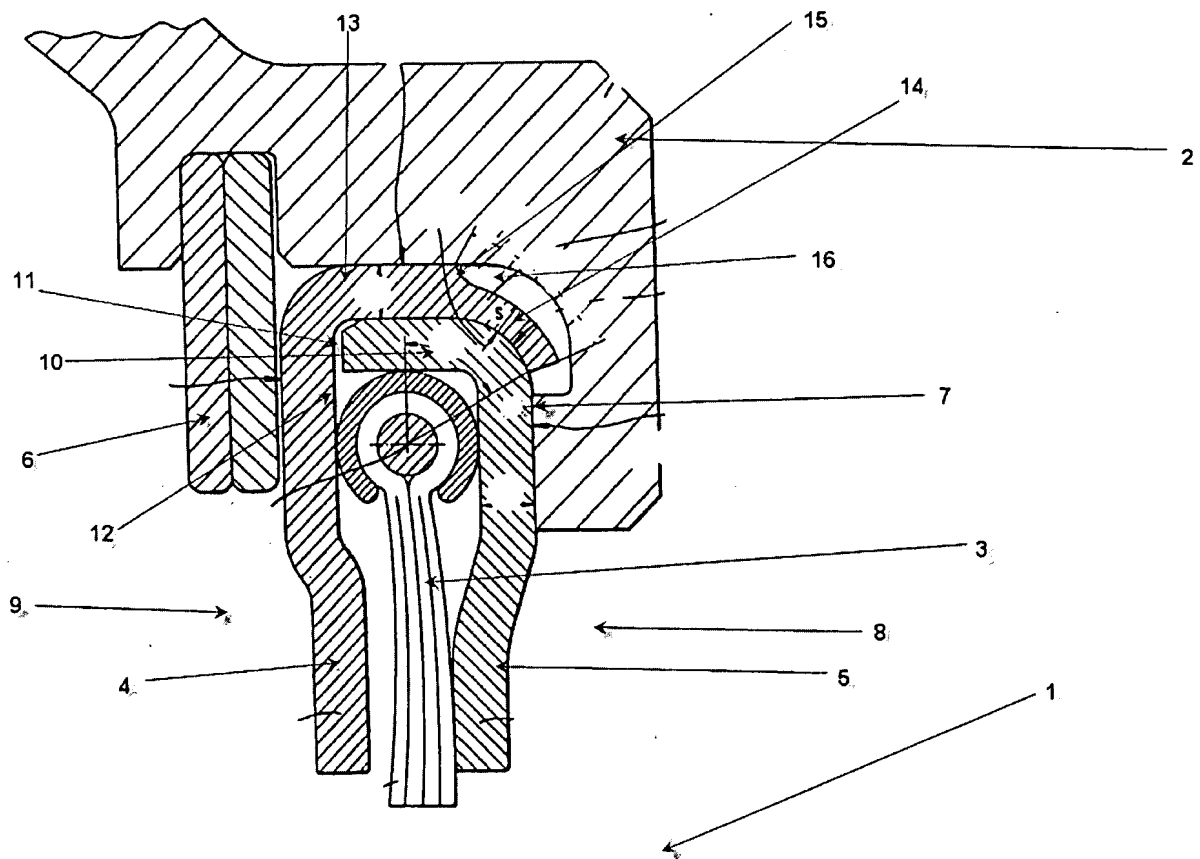
an integral projection (15) provided on the supporting plate (4); and

recess (15) provided on one of the rotor, the stator (2) and the fastening element;

wherein the integral projection (15) and the recess (16) [are configured to interact with each other in a positive-locking manner to maintain the press-fit against movement in a radial

direction and to provide definite positioning of the bristle housing so as to prevent relative rotation and reversed mounting of the entire bristle housing]*.

*It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). By the very nature of the structure between the integral projection (15) and the recess (16), they are capable of being [configured to] interact with one another helping to position the housing so as to deter rotation and reversed mounting of the bristle housing.



Re: Claims 3-5, Werner discloses the cover plate and supporting plate are formed by non-cutting shaping and deep drawing (column 1, line 66). The bristle housing (4,5) is formed by flanging the cover plate and supporting plate.

Re: Claim 8, wherein the integral projection (15) is formed during non-cutting shape of the supporting plate (4). Because the projection is integral with the supporting plate, it stands to reason that it is formed during the forming of the cover plate during the non-cutting shaping of the supporting plate as described in Werner.

Re: Claim 9, wherein the integral projection (15) is one of lenticular (the outside portion of the projection as a curved (as in a curved lens)) exterior or conical.

Claim Rejections - 35 USC § 103

[4] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[5] Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Werner (WO98/53229), in view of Flower (US-5,474,305).

Although the invention is not identically disclosed or described as set forth 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a designer having ordinary skill in the art to which said subject matter pertains, the invention is not patentable.

As for Claim 12, Werner teaches of that of the above claims.

The difference between the claim and Werner is that Werner does not expressly disclose of at least one pair of holes arranged in alignment in the second one of the stator and rotor, the axial section and the circumferential section, the at least one pair of holes being configured to receive a fastener. Flower teaches of a brush seal similar to that of Werner including that of a bristle housing, stator and rotor; and in addition, Werner discloses of at least one pair of holes arranged in alignment in the second one of the stator and rotor, the axial section and the circumferential section, the at least one pair of holes being configured to receive a fastener (see figure 9 of Flower). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Werner to include the pin 53 and slot arrangement shown by Flower in figure 9 in order to prevent rotation of the bristle housing relative to the stator. The combination would result in the press fit of Werner being maintained in rotational and radial directions; thus Werner, as modified by Flower's embodiment in figure 9, shows the first and second positioning arrangements (53 and associated slot of Flower) to include at least one pair of holes (in stator, receiving 53, aligned with 17) in the stator in alignment with a pair of holes in the axial flange (17), where the pair of holes receive a fastener (53). The fastener is a bolt.

[6] Claim 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Werner in view of Hanrahan (U.S. Patent No. 5,066,025). Werner fails to disclose angled bristles. Hanrahan teaches that it is known in the art that bristles are usually located at an angle with respect to the radius for the purpose of maintaining proper sliding relationship with the rotor (column 1, lines 21-28). Where the range of article sizes disclosed in the prior art envelops the recited range, and there is no showing of criticality of the recited range, such recited range would have been

obvious to one of ordinary skill in the art. In re Reven, 390 F.2d 997, 156, USPQ 679 (CCPA 1968).

[7] Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Werner in view of Nakamura, US-6,106,190.

As for Claim 17, Werner teaches of a brush seal (see figure above) for sealing a rotor (1) with respect to a stator (2), comprising:

bristles (3) including free ends oriented toward a first one of the rotor (1) and the stator; a bristle housing (4,5), the bristles (3) fastened in the bristle housing (4,5), the bristle housing (4,5) press fit in an axial space between a fastening element (6) and a second one of the rotor and the stator (2), the bristle housing (4,5) press-fit on the second one of the rotor and the stator (2) against movement in a radial direction relative to the second one of the rotor (1) and the stator (2), the bristle housing (4,5) including

a cover plate (5) having an outer side surface (7) arranged on a first axial side (8) of the bristles (3) and an axial section (10) that extends axially from the outer side surface (7) in an axial direction away (10 can be considered as away from 3) from the bristles (3) to a free end (11),

a supporting plate (4) having an inner side surface (12) arranged on a second axial side (9) of the bristles (3) opposite the first axial side (8), and a circumferential section (13) that extends from the inner side surface (12) in the axial direction from the second axial side (9) of the bristles (3) to the first axial side (8) of the bristles (3) and axially beyond the free end (11) of the cover plate (5) to a flanged section (14), the flanged section (14) projecting radially inwardly beyond the free end (11) of the cover plate (5) [so as to form an undercut between the flanged

section (14), the free end (11), and the outer side surface (7)] (the undercut as claimed above does not truly delineate the structural limitations of such a structure-consider adding limitations properly denoting the actual structure of said undercut instead of just describing its location), the bristles (3) being fastened in the bristle housing (4,5) between the inner side surface (12) and the outer side surface (7);

a recess (15) provided on one of the rotor, the stator (2) and the fastening element.

The difference between the claim and Werner is that Werner does not expressly disclose of a weld spot projecting radially outwardly from the circumferential section [with the weld spot and recess as stated above configured to interact with each other to prevent relative rotation of the bristle housing]. Nakamura teaches of a sealing device similar to that of Werner. Nakamura further teaches of a projection (66b in figure 5b) which fits into a recess (62b) to prevent the two elements from rotating with respect to one another. Nakamura et al further discloses an embodiment having a welded projection (W in figure 6b) that serves the same purpose as the projection in figure 5b. Both projections function to prevent the projection or housing from rotating helping to positively position that of the bristle housing. Inasmuch as the references disclose these elements as art recognized equivalents, it would have been obvious to one of ordinary skill in the art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982). One skilled in the art would incorporate such projections with the motivation to prevent one element from rotating with respect to a second element.

Response to Arguments

[8] Applicant's amendment filed 9/10/2007 regarding rejections under 35 U.S.C. 103 have been fully considered. Due to the amendment to the claims, however, the examiner has decided to apply solely the reference of Werner for claim 1 as shown and described above. For latter claims in the in current claim listing, Werner has once again been combined with Flower and Nakamura et al., showing the prevalence in the art for fastening elements and weld spots as found in the prior art of seals. As discussed briefly above regarding the claim limitations attempting to claim the undercut of the instant invention, the examiner recommends that the applicant consider adding limitations properly denoting the actual structure of said undercut instead of just describing its location (i.e., said undercut possesses a free end/latter end not directly attached/touching said cover plate or supporting plate...).

Conclusion

[9] THIS ACTION IS NON-FINAL

[10] Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Reese whose telephone number is (571) 272-7082. The examiner can normally be reached on 7:30 am-6:00 pm Monday-Thursday.

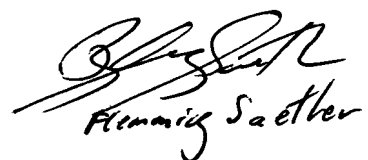
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katherine Mitchell can be reached at (571) 272-7069. The fax number for the organization where this application or proceeding is assigned is the following: (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DCR



David Reese
Assistant Examiner
Art Unit 3677



Fleming Sæther